

Public Works Academy of Seminole County

TECHNICAL COURSE MODULES (F)

➤ Computer Trouble Shooting (4 hours) /

Performance Objectives:

- Build a regular maintenance program.
- Detect and resolve problems.
- Develop a procedure for troubleshooting.
- Use standard diagnostic software.
- Install new and upgrade software.

➤ Roadway Drafting/Design (4 hours) / PDV 0120

Course Description: This course is a hands-on class to understand the basic concepts and principles of roadway drafting and design as it relates to the public works/utilities field.

Performance Objectives

- Locate and plot property boundaries.
- Calculate distances and bearings of property lines.
- Write legal descriptions for parcels of property.
- Locate and or plot parcels of property from legal descriptions.
- Calculate angles from property bearings.
- Plot, draw and dimension cross sections and profiles.
- Design and draw utilities including water systems, sanitary sewer systems, and storm drainage systems.
- Calculate and plot roadway profiles, elevations, and slopes in percentages.
- Calculate and plot slopes, elevations, and inverts for sewer lines.
- Draw and dimension details for water, sewer, and drainage utilities.
- Draw elevation contours from survey field notes.

Outline:

- I. Introduction
- II. Need for the project
- III. Incorporate basic design criteria used in plan preparation
- IV. Survey notes
- V. Plan & Profile and Cross Section sheets
- VI. Review information needed for determining material quantities, utility notification and relocation, survey construction stake out and project construction

➤ Introduction to Surveying (8 hours) / PDV 0121

Course Description: From the building of the Great Pyramids of Giza, the great Era of Exploration and to the birth of the United States, the History of Surveying is an interesting journey through time exploring the significant events and roles that Surveyors have played throughout history. This course will bring together great scientists, astronomers, mathematicians, explorers, map makers and even clock builders that have all had an impact in shaping this profession.

Performance Objectives

- Understand the history of land surveying.
- Read various types of legal descriptions.
- Read plats and surveys.
- Understand the types of surveys performed.
- Understand what statutes govern the profession of land surveying.
- Identify types of land surveying equipment.

Outline:

- I. Basic concepts of Surveying
- II. Role of the today's Surveying and Mapping Professional
- III. Different types of instruments used and their functions
- IV. Different types of Survey and Mapping products

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- V. "Hands-on" demonstrations with several instruments including the compass, transit, automatic level, theodolite, total station and GPS equipment.

Traffic Systems (12 hours)

Performance Objectives:

Traffic Operations Theory & Practice (2 hr.)

- Learn the basic principals and objectives.
- Understand the governing laws and applicable standards.
- Learn the essential elements of traffic operations.
- Assess practical decision making in maintenance operations.
- Learn how to deal effectively with the public.

Basics of Roadway Signing & Paving Marking (4 hr.)

- Learn the applicable standards.
- Understand the signing and striping materials.
- Examine the effective maintenance operations.
- Understand the sign fabrication procedures.
- Evaluate practical record keeping and inventories.

Traffic Signals & Signal Systems (4 hr.)

- Learn the governing laws and applicable standards.
- Examine the basic theory and application of signal operations.
- Understand signal support structures.
- Examine traffic control equipment.
- Understand vehicular/pedestrian sensory devises.
- Understand preventive maintenance operations.

Traffic Control During Construction (2 hr.)

- Learn the basic rules and applicable standards.
- Understand the work zone safety rules.
- Learn the fundamental traffic zone set-ups
- Examine the liability issues.

➤ Intro to Geographic Information Systems (GIS) (4 hours) / PDV 0122

Course Description: This course will deal with how to make informed decisions on the application and employment of GIS and on available sources for data and assistance.

Performance Objectives:

- Exhibit a clear understanding of what Geographic Information Systems are.
- Employ free ArcExplorer GIS software to view and symbolize data.
- Discuss where on the web appropriate digital data can be obtained.
- Evaluate existing data sets for fitness of use for particular projects.
- Determine what additional training is required (if any) to facilitate GIS use in their current job.

Outline:

- I. Components and functions of a GIS.
- II. Evaluating existing data (hard copy and digital)
 1. Source Scales & Source Formats
 2. Spatial Coordinate Systems.
- III. Utilizing Metadata.
- IV. Overview and demo of ArcView and/or ArcExplorer software.
- V. Getting Help
 1. List servers & Trade Journals
 2. Local User Groups